Water Resources Coordinating Council
Wednesday, September 21, 2022

Meeting Notes

Call to Order
The meeting was called to order at 9:03 AM. Virtual meeting logistics were reviewed and participants wishing to make public comment were asked to use the virtual meeting chat to request time. There were a total of 20 meeting participants. A roster showing members present is attached to the meeting notes.

WRCC Mission and Objectives Review
A discussion reviewing the membership, mission, powers, and duties of the WRCC was led by Secretary Naig. The legislation establishing WRCC can be found in Iowa Code Chapter 466B and a summary of key WRCC objectives can be found in the attached slides.

Iowa Drought Plan Update
Tim Hall, DNR Hydrology Resources Coordinator, gave an update on the status of the Iowa Drought plan, which should be completed in 2023, A copy of the presentation for this topic can be accessed with these meeting notes.

HUD Iowa Watershed Approach Final Report
Six years after initial kickoff, the Iowa Watershed Approach is wrapping up with its HUD funding on September 30th. Jeff Geerts, Iowa Economic Development Authority, gave an overview of the project grant and the different components. Presentations were provided by Jim Marwedel with the Iowa Flood Center and Kate Gianinni with the Iowa Flood Center. Copies of those presentations can be accessed on the WRCC website.

WRCC Member Agency Updates (All)
NWS (Zogg)- The National Weather Service meeting briefing was presented during the drought presentation. A copy of that presentation is attached to the meeting notes.

ISU (Helmers)- New projects announced last week for Iowa Nutrient Research Center. Starting to plan for winter meetings statewide through ISU Extension. Just finished the International Drainage Symposium earlier in September. 200 attendees representing 12 countries. Tours showcased water quality projects in Iowa.

USACE- (Brown, provided electronically)- Northwest Division Commander Col Van Epps visited Rathbun in August. The purpose of the visit by our Division Commander was a result of our Kansas City District Commander Col Rayfield being so impressed during his visit in June with the collaboration occurring in the Rathbun Lake watershed. In particular, the number of partners that are involved sponsoring wetland projects utilizing the Continuing Authorities Program Section 1135 and how long we have all been working together to implement watershed based / water quality improvement projects.

USGS (Nania)- Streamflow information was covered by NWS. Still have water quality monitors in place for the season. Low flows are a challenge in places, some will come out for the winter during the next quarter. Hosted Brazilian delegation to highlight efforts in Cedar Rapids to evaluate local aquifer. Still working on data collection associated with PFAS studies that are ongoing. Expanding studies to look at sediment and minnows in addition to water.

IIHR (Gianinni)- Leadership changes since last meeting. Larry Weber has returned as director and will work on some long-term visioning. University of Alabama received a $306 million grant for research, of which $21 million will go to University of Iowa to assist.

EPA (Jones)- No report.

IEDA (Geerts)- Next round of CDBG applications for water/sewer is due October 1. One new project announced in Early to install bioretention aimed at flood reduction. More disaster recovery money is coming to Iowa in response to the 2020 derecho. Working with communities to incorporate Green Streets criteria as required by HUD for disaster recovery projects.

DNR (Schnieders)- Staff are finally resuming travel and on-site events with field-based projects. Working to implement Nutrient Reduction Exchange projects and presenting findings on studies regionally and nationally. Working with permittees to develop MOUs to recognize exchange projects. Working with several communities on wastewater system optimization. Toured nine communities in mid-August to look at alternative approaches in communities addressing nutrient removal as part of their treatment systems. Beach monitoring season is wrapping up. Final statistics are available through DNR.

IDALS (Kozak)- See attached slides for IDALS updates.

Public Comments
There were no requests by the public to address the Council.

Adjourn
The meeting was adjourned at 11:07 AM. The next meeting will be held on the afternoon of Tuesday, November 29th at the same location following hybrid participation format.

		WRCC Representative	Position	Organization
x	1	Mike Naig	Secretary (WRCC Chair)	Iowa Department of Agriculture & Land Stewardship
	2	Kim Reynolds	Governor	Governor's Office
		Nate Ristow	*Designee*	Governor's Office
	3	Kayla Lyon	Director	Iowa Department of Natural Resources
x		*Adam Schneiders*	*Designee*	Iowa Department of Natural Resources
x	4	Susan Kozak	Director	IDALS - Division of Soil Conservation & Water Quality
x		*Jake Hansen*	*Designee*	IDALS - Division of Soil Conservation & Water Quality
	5	Kelly Garcia	Director	IA Department of Public Health
		Kenneth Sharp	*Designee*	IA Department of Public Health
	6	John Benson	Acting Director	Iowa Homeland Security & Emergency Management
x		*Larry Giofreddi (Jim Marwedel)*	*Designee*	Iowa Homeland Security & Emergency Management
	7	Dan Robison	Dean	College of Agriculture and Life Sciences, ISU
x		*Jamie Benning (Matt Helmers)*	*Designee*	College of Agriculture and Life Sciences, ISU
	8	Edith Parker	Dean	College of Public Health, University of Iowa
		Tom Peters	*Designee*	College of Public Health, University of Iowa
	9	John Fritsch	Dean	College of Humanities, Arts and Sciences, UNI
		Maureen Clayton	*Designee*	College of Humanities, Arts and Sciences, UNI
	10	Scott Marler	Director	Iowa Department of Transportation
		Marc Solberg	*Designee*	Iowa Department of Transportation
	11	Debi Durham	Director	Iowa Economic Development Authority
x		*Jeff Geerts*	*Designee*	Iowa Economic Development Authority
	12	Debi Durham	Executive Director	Iowa Finance Authority
		Tony Toigo	*Designee*	Iowa Finance Authority
	13	Alec Scranton	Dean	College of Engineering, University of Iowa
x		*Larry Weber (Kate Gianinni)*	*Designee*	College of Engineering, University of Iowa
x	14	Jon Nania	Director	USGS, Iowa-Illinois Water Science Center
		Paul Rydlund	*Designee*	USGS, Iowa-Illinois Water Science Center
	15	Jon Hubbert	State Conservationist	USDA, Natural Resources Conservation Service
		Scott Cagle	*Designee*	USDA, Natural Resources Conservation Service
	16	Matt Russell	State Executive Director	USDA, Farm Service Agency
	17	Theresa Greenfield	State Director	USDA, Rural Development
		Kate Sand	*Designee*	USDA, Rural Development
	18	Meg McCollister	Regional Administrator	EPA-Region 7
x		*Edward Chu (Doug Jones)*	*Designee*	EPA-Region 7
	19	Colonel Jesse Curry	Rock Island District Commander	US Army Corps of Engineers Rock Island District
		Jason Smith	*Designee*	US Army Corps of Engineers Rock Island District
x		*Philip Brown*	*Designee*	US Army Corps of Engineers
		Jeff Zogg	*Designee*	National Weather Service

Iowa Department of Natural Resources

Leading Iowans in caring for our natural resources

1

State of Iowa droughts . . .

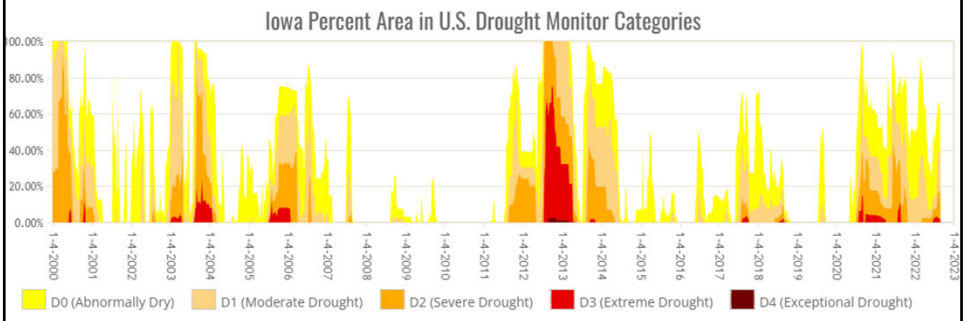
1988

2012

2021

2

State of Iowa droughts . . .



3

Summer of 2021 – Looming water availability crisis in Des Moines

Lower river levels
Water Quality Concerns (cyanobacteria)

Meetings at the State Emergency Operations Center

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

4

Started the discussion with a question:

Should the state of Iowa have a drought plan? . . . the answer was "Yes"

First meeting held December 8, 2021

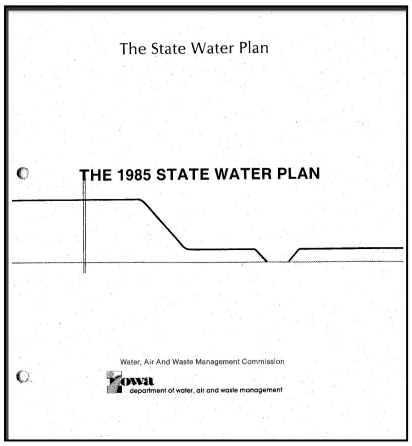
5

Part of the problem:

1985 Water Plan

Changes since 1985:

Rainfall trends
Population
Ag production concentration
Industry changes (ethanol)
Introduction of the USDM
Remote sensing and data collection
GIS and mapping



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The 1985 Water Plan provides some guidance, but little specific information on drought . . .

5.2.2 Priority Allocation System

In developing the Water Plan the Commission considered a wide range of priority allocation systems. From a broad sense these ranged from a strictly structured allocation system which would be implemented on a day-to-day basis in permitting new or existing regulated users, to that of a clearer definition of beneficial use than what now appears in the statute. Input in developing the proposed priority allocation scheme and means of implementation was received from staff, existing users, the public, the Commission's Water Plan committee, and the Water Plan Technical Advisory Committee.

. Drought

a. Governor's Declaration. The Governor can declare by Executive Order a state of emergency (such as during a severe drought) implementing the priority allocation scheme on a temporary basis. This could be applied statewide (as in 1977) or within a region of the state severly affected by a drought. Such a declaration may not require an initial investigation by the Department as to the applicability of implementing the priority allocation scheme.

7

What is the "Priority Allocation System?"

Priority Allocation System

It is recommended that a structured priority allocation system be adopted that would only be implemented during severe droughts (such as Iowa experienced in the 1930's, 1950's and 1970's), or in local areas due to shortage. Such a structured system would only be applied as warranted under those conditions defined in the next section which would serve as a triggering mechanism.

The allocation structure, from highest to lowest priority, is as follows.

1. Self-supplied domestic.
2. Domestic fraction of municipal and rural water systems.
3. Livestock production.
4. Power generation.
5. Industrial.
6. Non-Traditional irrigation.
7. Other irrigation.
8. Recreation and leisure.
9. Out of state exports.

8

What will a State of Iowa Drought Plan do?

- Identify vulnerable infrastructure, industries, and populations
- Determine associated risks under various drought scenarios
- Establish trigger levels for specific regions and sectors in the state
- Identify mitigation measures
- Result in for more coordinated and efficient responses that are data driven

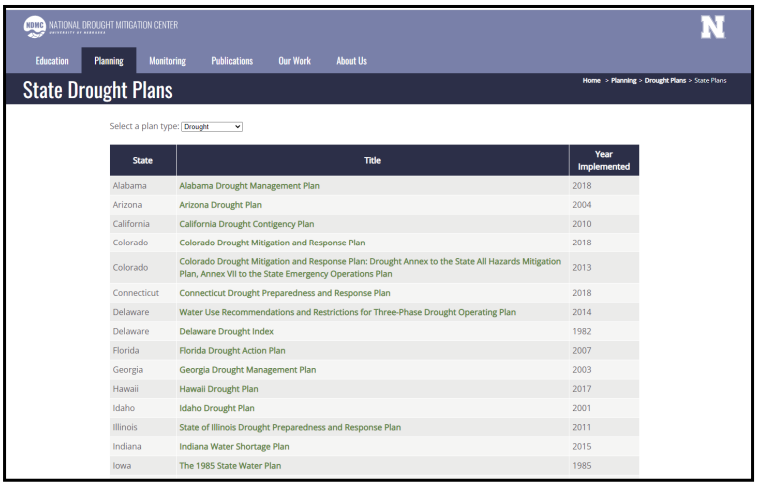
9

What questions will a State of Iowa Drought Plan answer?

- ✓ What do we need to know and when do we need to know it?
- ✓ What do we need to do and when do we need to do it?

10

Began reviewing other state drought plans



State	Title	Year Implemented
Alabama	Alabama Drought Management Plan	2018
Arizona	Arizona Drought Plan	2004
California	California Drought Contigency Plan	2010
Colorado	Colorado Drought Mitigation and Response Plan	2018
Colorado	Colorado Drought Mitigation and Response Plan: Drought Annex to the State All Hazards Mitigation Plan, Annex VII to the State Emergency Operations Plan	2013
Connecticut	Connecticut Drought Preparedness and Response Plan	2018
Delaware	Water Use Recommendations and Restrictions for Three-Phase Drought Operating Plan	2014
Delaware	Delaware Drought Index	1982
Florida	Florida Drought Action Plan	2007
Georgia	Georgia Drought Management Plan	2003
Hawaii	Hawaii Drought Plan	2017
Idaho	Idaho Drought Plan	2001
Illinois	State of Illinois Drought Preparedness and Response Plan	2011
Indiana	Indiana Water Shortage Plan	2015
Iowa	The 1985 State Water Plan	1985

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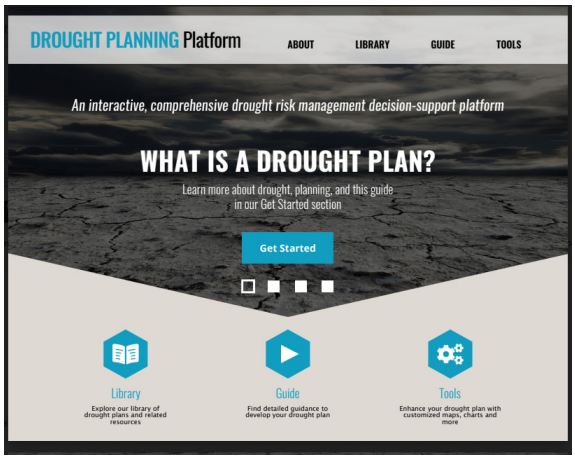
National Drought Mitigation Center provided a draft version of their "Drought Planning Platform."



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Then we got started . . .

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- **Established a Core Drought Team**

  HSEMD
  DNR
  IDALS
  NDMC Technical and Planning Staff
  USDA Climate Hub (Ames, Iowa)

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Identified relevant state and federal partners

- Meeting every two weeks
- Presentations on general geology and hydrogeology
- Presentations on rural water systems (including the Lewis and Clark Rural Water System)
- Organized and began writing of the Iowa Drought Plan
- Coordinated Stakeholder input meetings
  - Held at several locations across the state
  - Invited water utilities, Emergency Managers, Ag groups, local government

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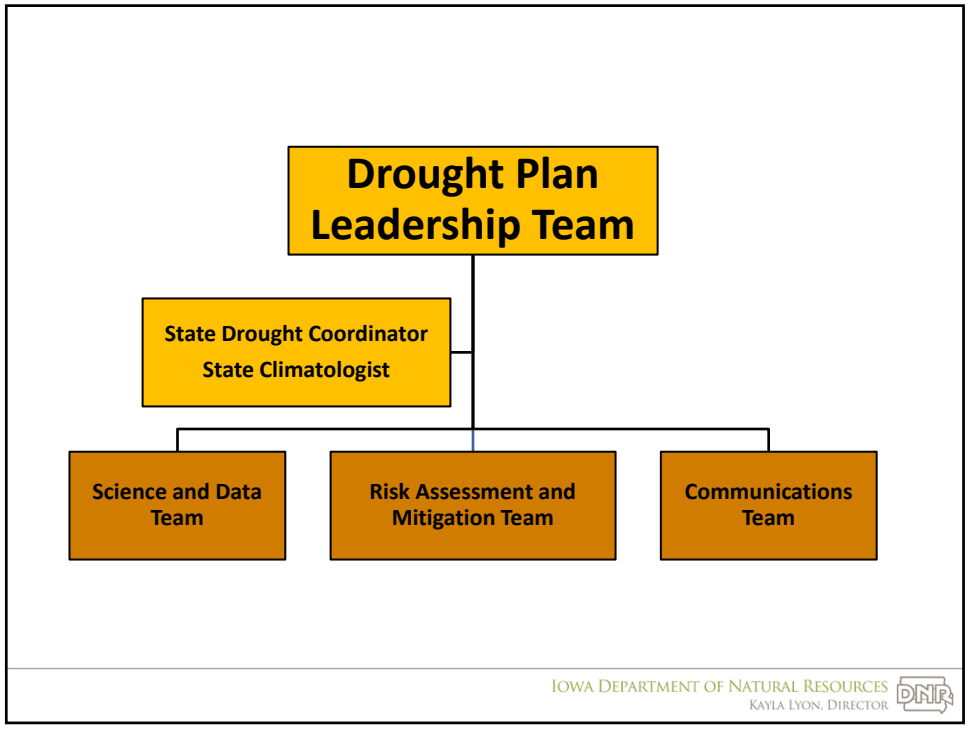

16

- **Established a Science and Data Team**

  State Geologist
  State Climatologist
  DNR Water Supply Geologist
  Des Moines Water Works COO
  National Weather Service
    Meteorology
    Hydrology

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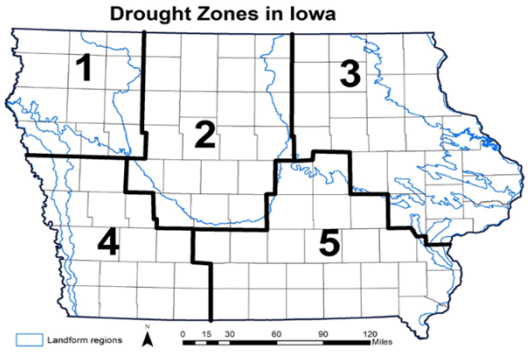
- **Science and Data Team**



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- ## Science and Data Team

Drought Region 1 - Northwest Iowa

			Ranges				
Category	**Description**	**Possible Impacts**	**Soil Moisture**	**Streamflow**	**USDM**	**Precipitation**	**SPI**
Normal	Conditions	No impacts noted in the region for any sector.	Middle one third percentile	USGS rated as normal or above (25th to 75th percentile, or above).	No designation, or D0 for three weeks or less		
Watch					D0 or D1 for 4 weeks		
Warning							
Emergency							

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- ## Risk Assessment Team

Coordinated by HSEMD
Also updating the State Hazard Mitigation Plan
- Drought becomes a subset of that plan

Provides an opportunity to meet with almost every state agency
- DOT
- Health
- Economic Development
- Utilities Board
- Transportation

20

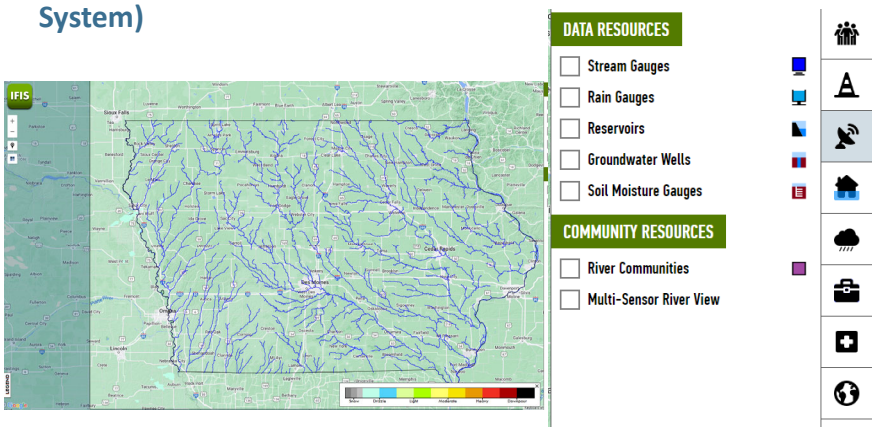
- **Communications Team**

A bit farther behind than the other teams
Will look at
what to communicate
when to communicate
how to communicate

21

Potential to develop an "Iowa Drought Information System"

The Iowa Flood Center has IFIS (the Iowa Flood Information System)



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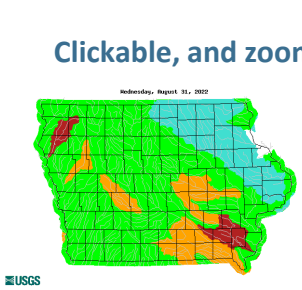
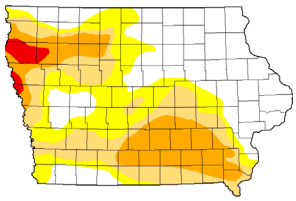
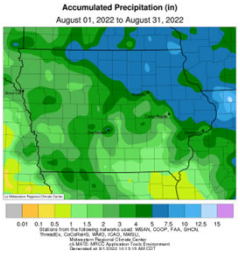
"Iowa Drought Information System"

Would include a central location for drought data, communications, conditions, drought levels, and other information.

Clickable, and zoomable.







23

Status as of right now . . .

Report is being written and compiled

Drought Core Team continues to meet every 2 weeks

Draft Iowa Drought Plan anticipated to be ready by mid-Oct

Draft plan sent to Stakeholders and other State Agencies in October

Comments will be reviewed and incorporated as needed in November

Final Draft Drought Plan – December 2022

24

Then what?

Wait for the next drought . . .

Table top exercise in 2023

Potential legislative proposals for the 2023 session

Updates and Revisions as needed and as identified in the plan

25

Questions or comments?

Tim Hall
Hydrology Resources Coordinator
Iowa Department of Natural Resources
515-452-6633

tim.hall@dnr.iowa.gov

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Water Resources Coordinating Council

- **Authority Granted in Chapter 466B.3**

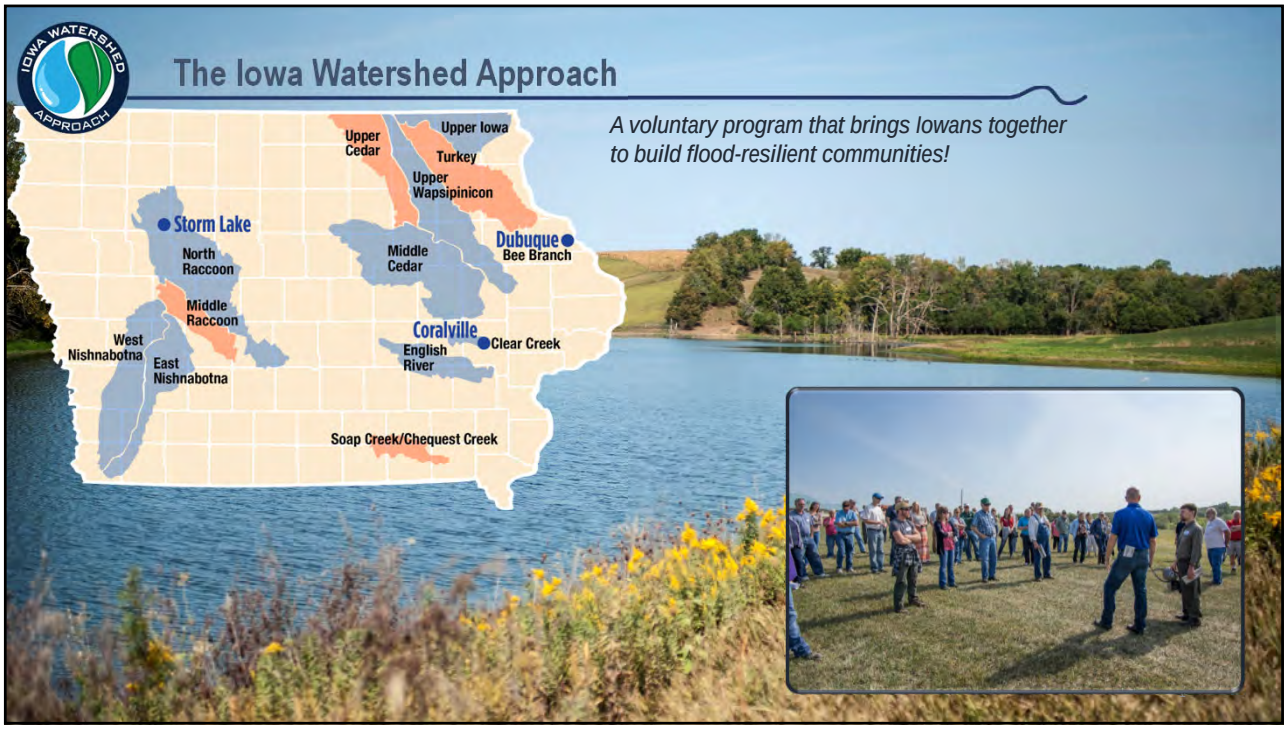
- **Purpose**
  - Preserve and protect Iowa's water resources
  - Coordinate management of resources in sustainable and fiscally responsible manner
  - Use integrated approach to manage resources comprehensively rather than compartmentally

- **Membership**
  - 12 state members in statute; Secretary of Agriculture is Chair
  - 6 federal partners from whom the Chair shall invite and solicit advice

Water Resources Coordinating Council

Duties and Powers Listed

- Engage in regular coordination of water resource-related functions
- Consider steps to address planning, management, and implementation of water resource improvement
- Facilitate communication and participation among all stakeholders
- Improve availability of water resource information
- Identify inefficiencies in current programs and recommend ways to eliminate redundancy
- Review best available technologies
- Develop protocol which identifies high priority watersheds
- Review standards for voluntary, performance-based water resource management, soil conservation, and land management
- Work with other states when mutual interests are aligned
- Other collaborative watershed planning efforts as necessary.


The Iowa Watershed Approach
A voluntary program that brings Iowans together to build flood-resilient communities!
Upper Iowa
Upper Cedar
Turkey
Upper Wapsipinicon
Storm Lake
North Raccoon
Middle Raccoon
Middle Cedar
Dubuque
Bee Branch
West Nishnabotna
East Nishnabotna
Coralville
English River
Clear Creek
Soap Creek/Chequest Creek

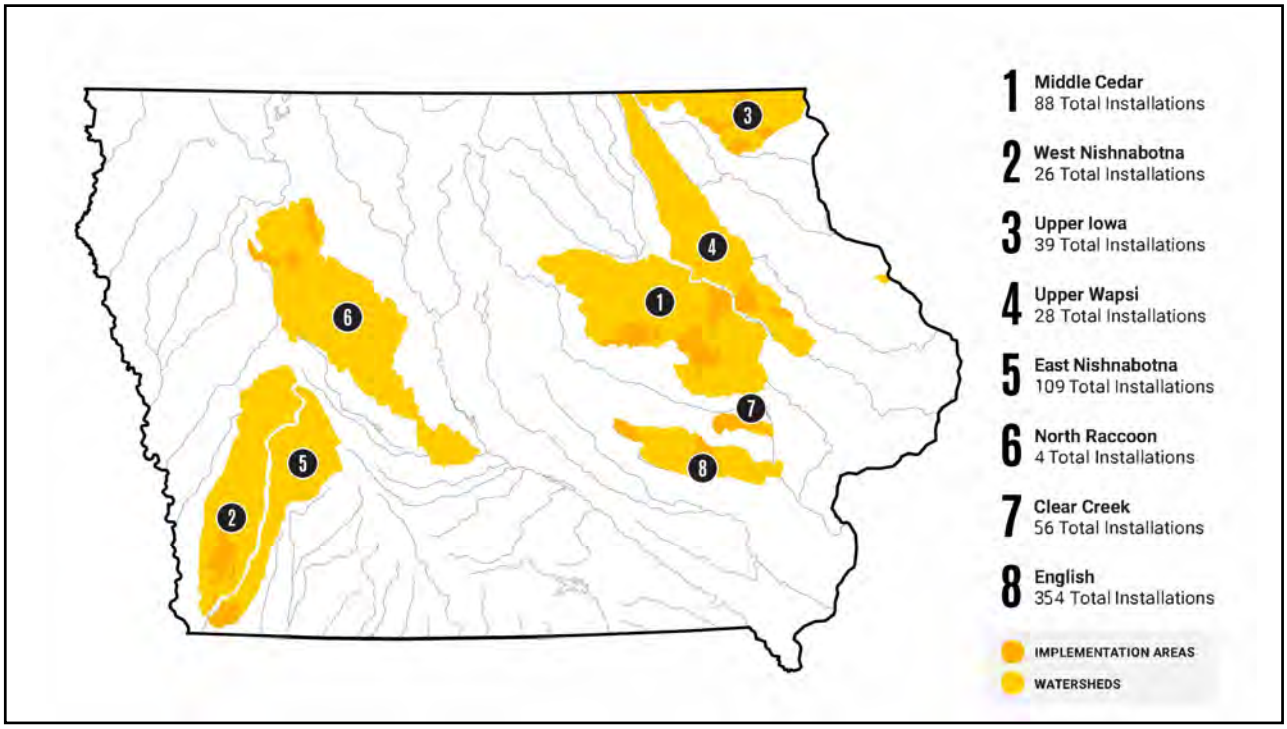
1


Seven Watershed Management Plans:
• East Nishnabotna
• West Nishnabotna
• North Raccoon
• Clear Creek
• Middle Cedar
• Upper Wapsi
• Upper Iowa
MANAGEMENT PLAN
Public Open House
WELCOME: Middle Cedar Watershed Management Plan
At this Open House you can learn about:

2


Seven Flood Resilience Action Plans:
• Upper Iowa (Freeport)
• Upper Wapsi (Quasqueton)
• Middle Cedar (City of Vinton)
• Clear Creek (Coralville)
• English River (BRIC Application)
• North Raccoon (City of Gowrie)
• E & W Nishnabotna (Riverton Road Case Study)
ASTIG PLANNING

3


1 Middle Cedar
88 Total Installations
2 West Nishnabotna
26 Total Installations
3 Upper Iowa
39 Total Installations
4 Upper Wapsi
28 Total Installations
5 East Nishnabotna
109 Total Installations
6 North Raccoon
4 Total Installations
7 Clear Creek
56 Total Installations
8 English
354 Total Installations
IMPLEMENTATION AREAS
WATERSHEDS

4


• 90-100% Cost-share
• 704 flood mitigation projects constructed
Jellison Wetland
Middle Cedar Watershed
Drainage Area: 1,336 acres
Pool Area: 13 Acres
Bid Cost: $633,845
The Nature Conservancy
Protecting nature. Preserving life.
IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

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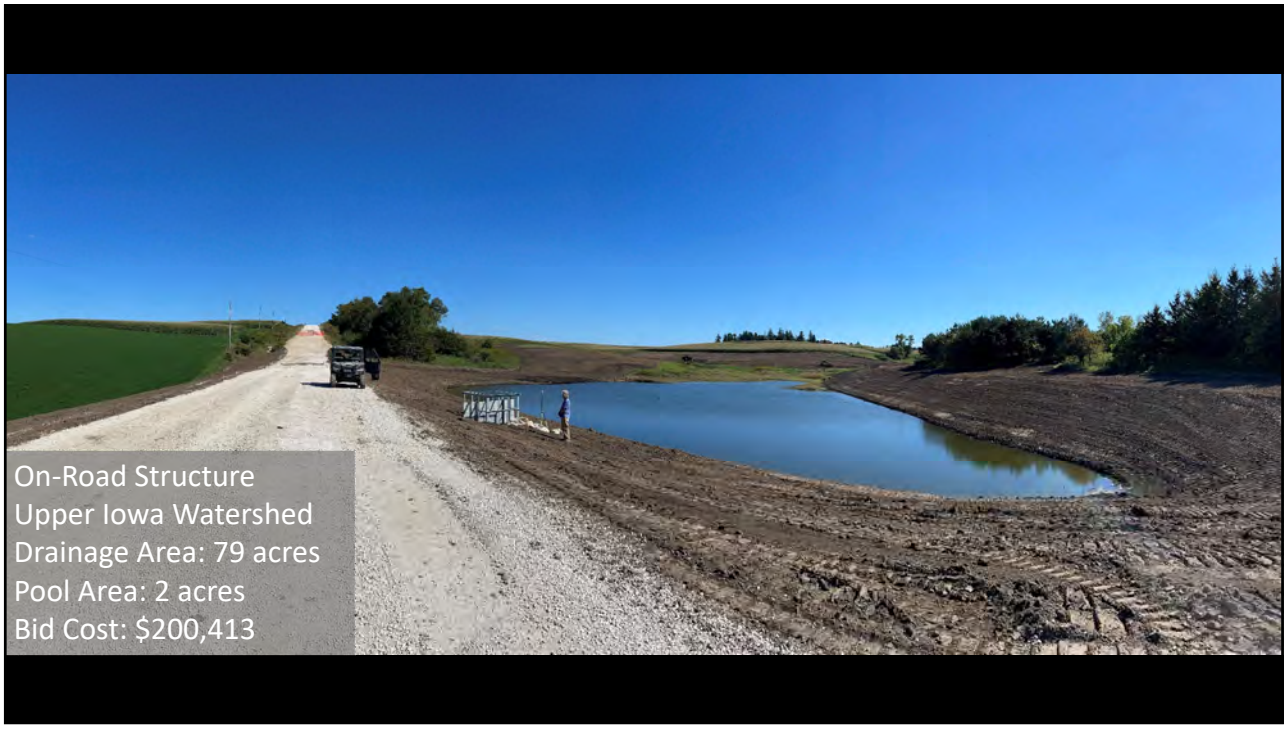
On-Road Structure
Upper Iowa Watershed
Drainage Area: 79 acres
Pool Area: 2 acres
Bid Cost: $200,413

6


"I guess there's a little pride involved that I took care of this land," says Mount, who has farmed for 44 years. "I've got a feature that's nice to look at. And I think we've helped some communities downstream, too.
Mount Pond
East Nishnabotna Watershed
Drainage Area: 1,153 acres
Pool: 2 acres
Bid Cost: $427,090

7


Iowa Secretary of Agriculture Mike Naig visits with farmers, and Soil Commissioners at the Jellison wetland.

8

Senator Joni Ernst visits the Maas Family in the Clear Creek Watershed. The Maas family is a landowner host for the Iowa Flood Center Hydrostation.

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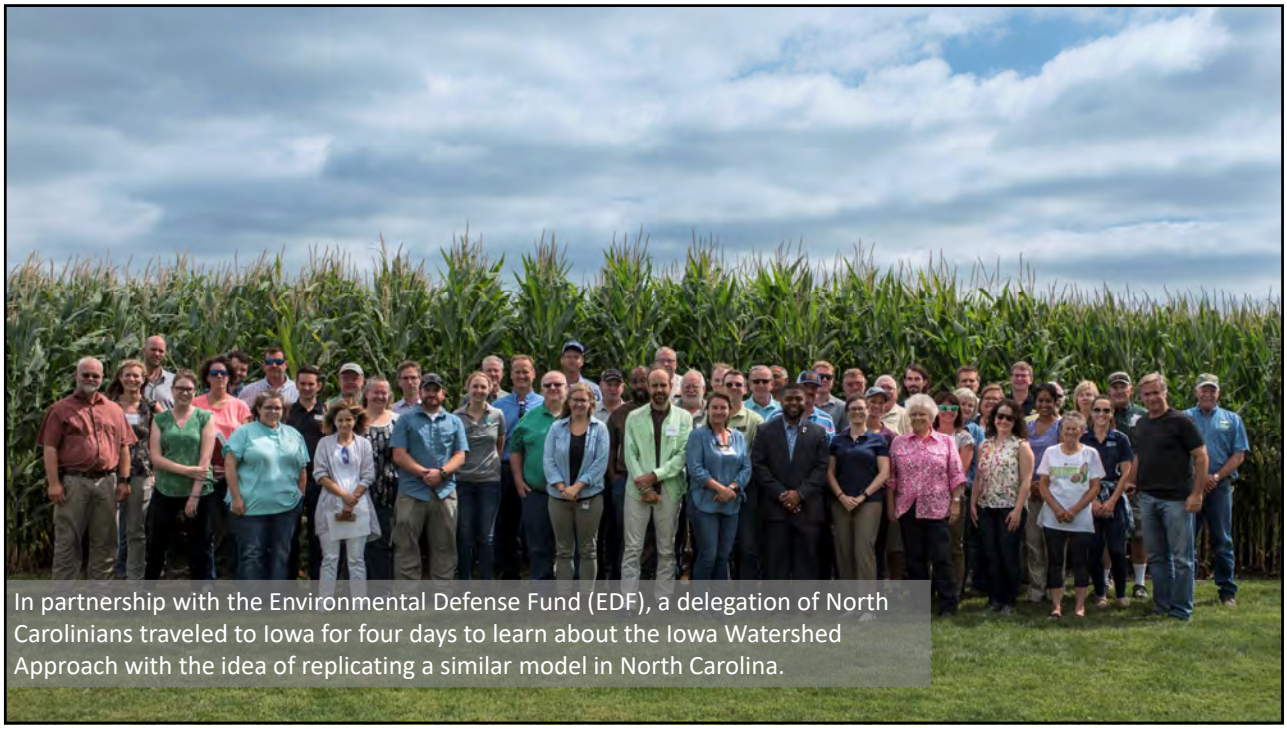

In partnership with the Environmental Defense Fund (EDF), a delegation of North Carolinians traveled to Iowa for four days to learn about the Iowa Watershed Approach with the idea of replicating a similar model in North Carolina.

10

In June 2022, over 100 people gathered for a Project Bus Tour in the Middle Cedar Watershed.

11

A vision for a more resilient Iowa

The Iowa Watershed Approach

Award Winning

1. APA Iowa Chapter – Environmental Planning (2019)
2. APA Iowa Chapter – Environmental Planning (2021)
3. 1,000 Friends of Iowa - Innovative Leadership (2021)
4. 1,000 Friends of Iowa – Stormwater (Private) (2021)
5. IFSMA – Project of the Year (2021)
6. Waterfront Center – 2021 Excellence on the Waterfront honor
7. American Water Resources Association – Integrated Water Resources Management (2021)

@IWAReduceFloods

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National Weather Service Briefing

Water Resources Coordinating Council Meeting
September 21, 2022

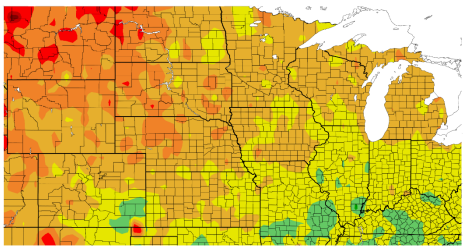
Jeff Zogg, Senior Service Hydrologist

1

Observed Temp & Precip Departure

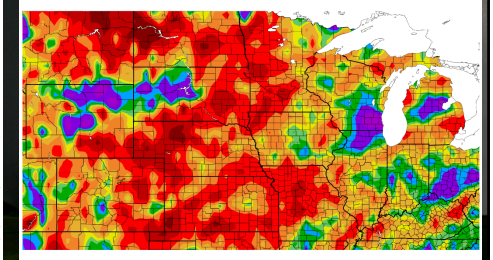
Departures from Normal

Last 30 Days
Departure from Normal Temperature (F)
8/20/2022 – 9/18/2022



URL: https://hprcc.unl.edu/products/maps/acis/nwscr/7dTDeptNWSCR.png

Last 30 Days
Percent of Normal Precipitation (%)
8/20/2022 – 9/18/2022



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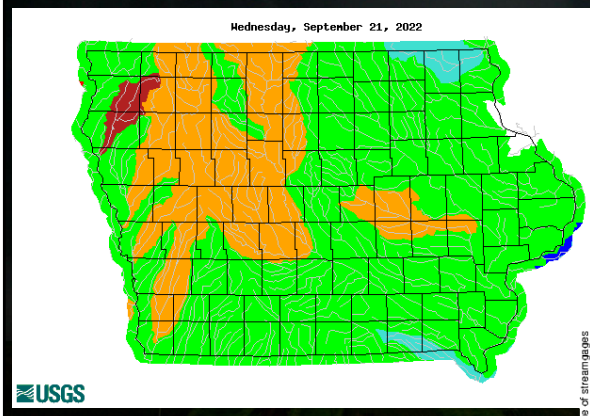
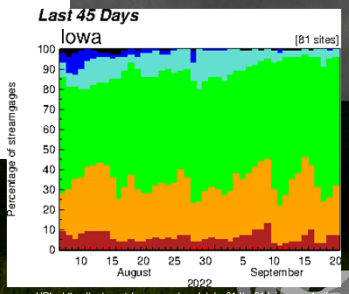
2

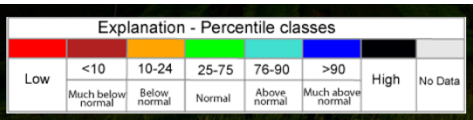
Current Streamflow

Values vs. Normal (Percentiles)



- Varied across Iowa





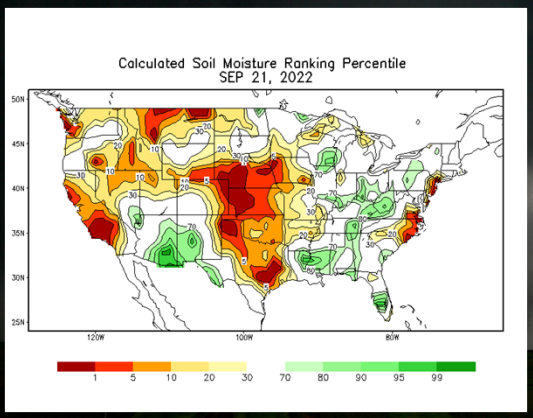
URL: https://waterwatch.usgs.gov/images/index.php?mt=pa01d_nwc&st=ia

URL: https://waterwatch.usgs.gov/regplots/pa01d/pa01d_ia_sum_1.gif

3

Current Soil Moisture

Wetness Percentile

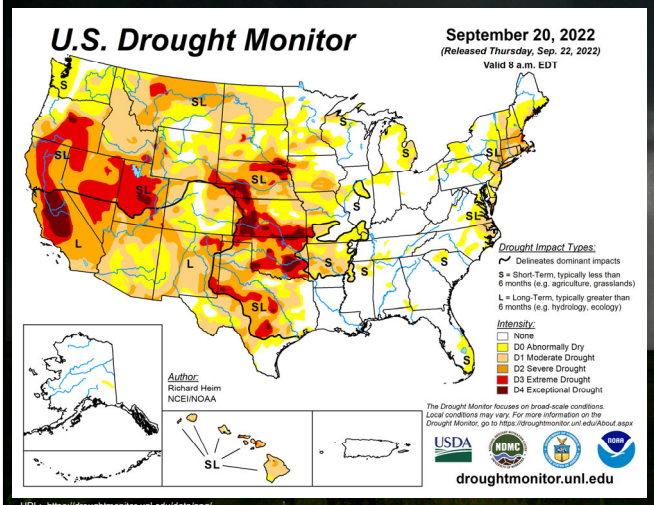


- Near to below normal

URL: https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/Figures/daily/curr.w.rank.daily.gif

4

Current Drought Monitor



- Drought conditions across Iowa

URL: https://droughtmonitor.unl.edu/data/png/

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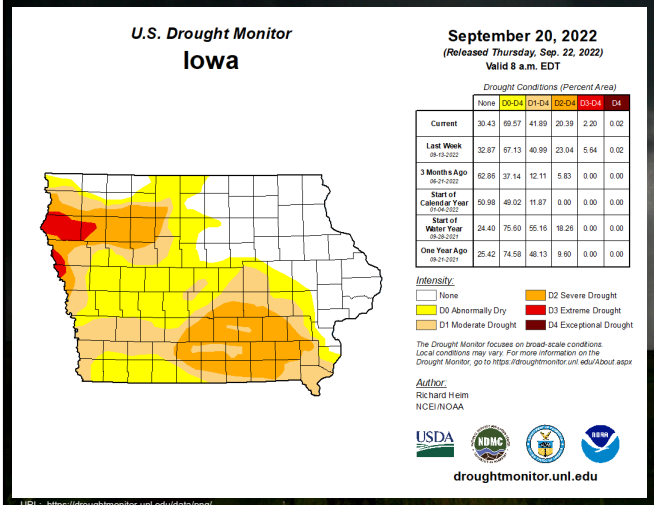
Current Drought Monitor



- Drought conditions across Iowa

URL: https://droughtmonitor.unl.edu/data/png/

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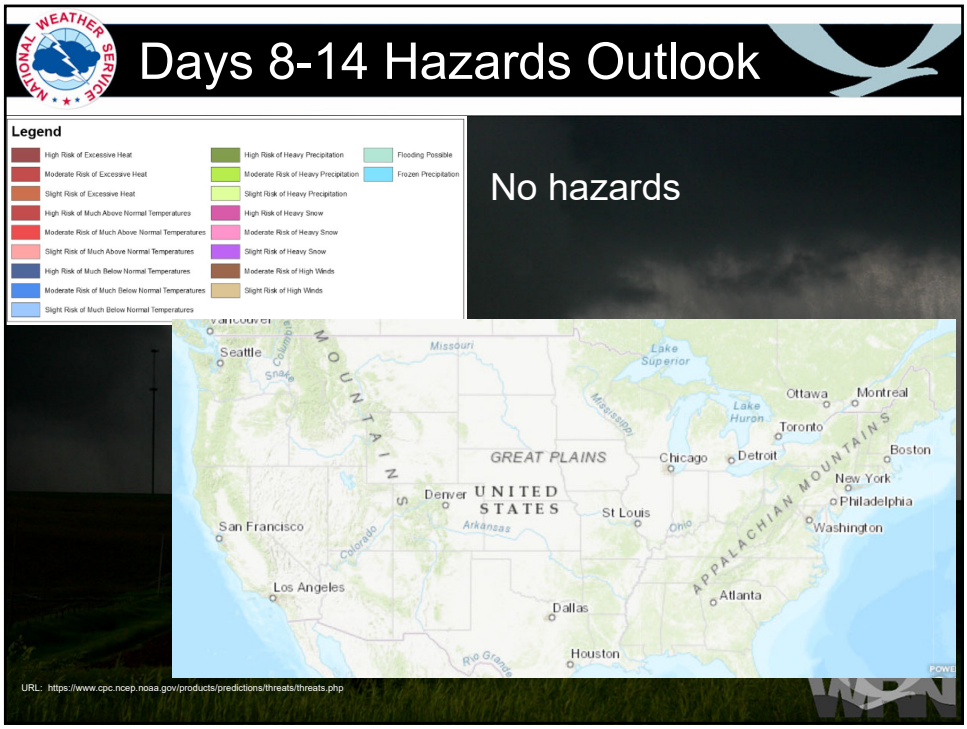
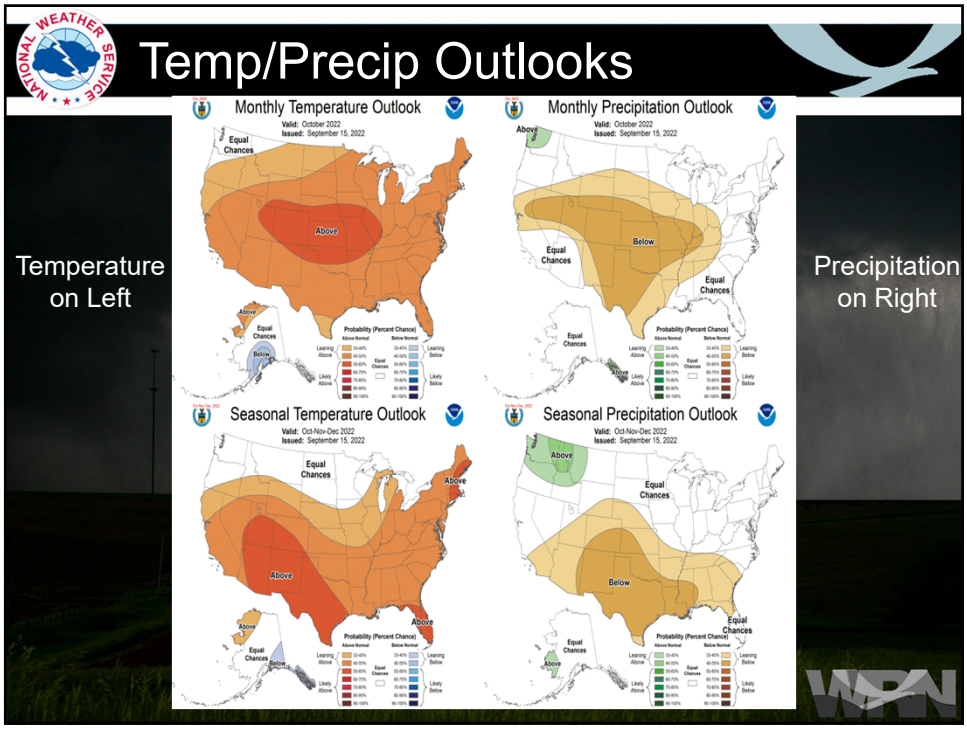
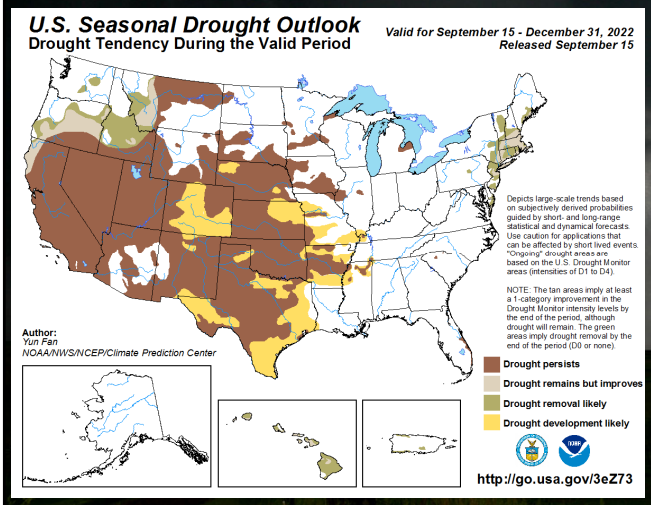

Days 8-14 Hazards Outlook
Legend
High Risk of Excessive Heat
Moderate Risk of Excessive Heat
Slight Risk of Excessive Heat
High Risk of Much Above Normal Temperatures
Moderate Risk of Much Above Normal Temperatures
Slight Risk of Much Above Normal Temperatures
High Risk of Much Below Normal Temperatures
Moderate Risk of Much Below Normal Temperatures
Slight Risk of Much Below Normal Temperatures
High Risk of Heavy Precipitation
Moderate Risk of Heavy Precipitation
Slight Risk of Heavy Precipitation
High Risk of Heavy Snow
Moderate Risk of Heavy Snow
Slight Risk of Heavy Snow
Moderate Risk of High Winds
Slight Risk of High Winds
Flooding Possible
Frozen Precipitation
No hazards
Seattle
Missouri
Lake Superior
Ottawa
Montreal
Lake Huron
Toronto
Boston
GREAT PLAINS
Chicago
Detroit
New York
Denver
UNITED STATES
Philadelphia
St Louis
San Francisco
Arkansas
Washington
Los Angeles
Atlanta
Dallas
Houston
URL: https://www.cpc.ncep.noaa.gov/products/predictions/threats/threats.php

7


Temp/Precip Outlooks
Temperature on Left
Precipitation on Right
Monthly Temperature Outlook
Valid: October 2022
Issued: September 15, 2022
Monthly Precipitation Outlook
Valid: October 2022
Issued: September 15, 2022
Seasonal Temperature Outlook
Valid: Oct-Nov-Dec 2022
Issued: September 15, 2022
Seasonal Precipitation Outlook
Valid: Oct-Nov-Dec 2022
Issued: September 15, 2022
Above
Below
Equal Chances

8

Seasonal Drought Outlook

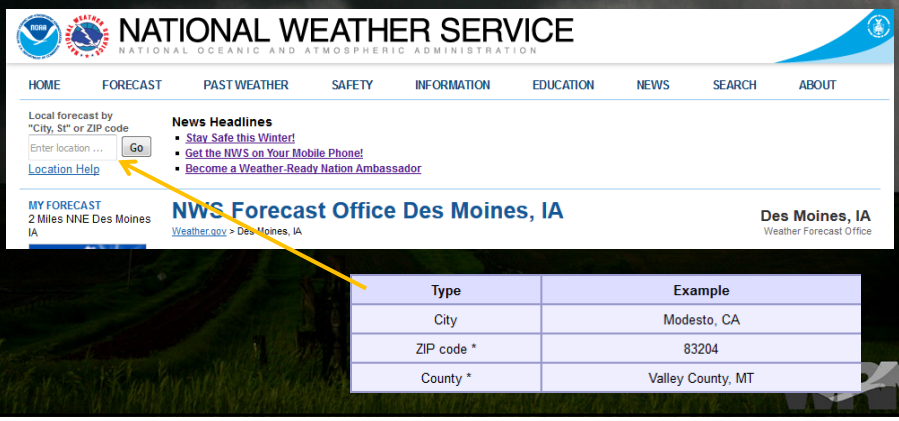


- Drought persistence expected

9

For the Most Recent Forecast

- For the most recent information for your area please visit http://weather.gov/desmoines and enter your location.



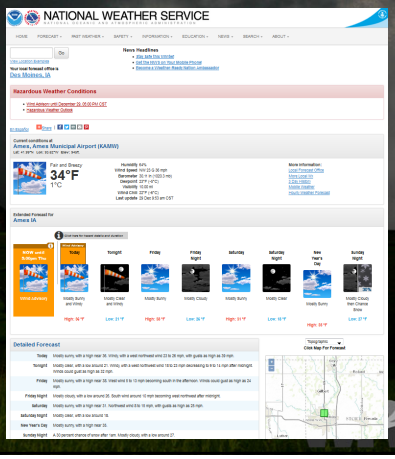
Type	Example
City	Modesto, CA
ZIP code *	83204
County *	Valley County, MT

10

For the Most Recent Forecast

- For the most recent information for your area please visit http://weather.gov/desmoines and enter your location.

Bookmark this page and/or resultant URL for further updates. This will always be the latest information.



11

Additional NWS Information

Social Media

- www.weather.gov/desmoines
- https://www.facebook.com/NWSDesMoines
- @NWSDesMoines
- http://www.youtube.com/user/NWSDesMoines
- NWS Des Moines

12

Strategies for Flood Resilience: A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

An outline of next steps, based on lessons HSEMD learned from the Iowa Watershed Approach Effort

HSEMD's Projects/Objectives under the Iowa Watershed Approach

- Develop a resilience strategies report to share lessons learned about flood reduction with a watershed approach
- Estimate potential loss avoidance associated with implemented IWA projects
- Incorporate resilience concepts in local and state plans
- Integrate watershed plans with hazard mitigation plans
- Develop parcel-level flood risk assessments (using Hazus) to integrate with mitigation planning & projects

- Develop a resilience strategies report to share lessons learned about flood reduction with a watershed approach

Strategies for Flood Resilience: A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

Potential Advantages of Using a Watershed Approach to Reduce Flooding

- Reduce losses from flood damage
- Lower flood elevations not only at the flood-prone area of focus, but also flood-prone areas further downstream (and thus reduce impacts downstream, rather than push them downstream)
- Improving water quality and wildlife habitat
- Possibly improve soil health and sustainability (depending upon specific methods used)
- Compared to other flood mitigation methods, reduce on-going maintenance through the use of nature-based methods

HSEMD Resilience Strategies Report

A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

With all its advantages, why isn't a watershed approach to flood mitigation used more often?

Because of several barriers

"The purpose of this report is to identify those barriers
and propose strategies
for how state and federal agencies
can assist communities in overcoming those barriers."

Barriers to Using a Watershed Approach for Flood Reduction

- ➔ Specific methods/practices that could result in flow and flood reduction not well understood (see pages 5-9)
- ➔ Does not work everywhere, at least not cost-effectively (see page 12)
- ➔ Communities need professional assistance to determine how much streamflow reduction needed in order to reduce flood impacts (see page 16)
- ➔ Communities need engineering and other assistance to determine costs, benefits and complete other requirements for developing an application for FEMA/other funding (see pages 26-27)
- ➔ Of course, communities need funding

Barriers
to Using a Watershed Approach for Flood Reduction

4 Strategies for Overcoming
Barriers
to Using a Watershed Approach for Flood Reduction

1. **Examine a watershed area's potential of using a watershed approach to reduce floods (i.e. calculating POWAR Ratios)**

In other words, how much potential does an area have for using a watershed approach to cost-effectively reduce flooding (and the costs associated with flooding)?

Example:
Dubuque County

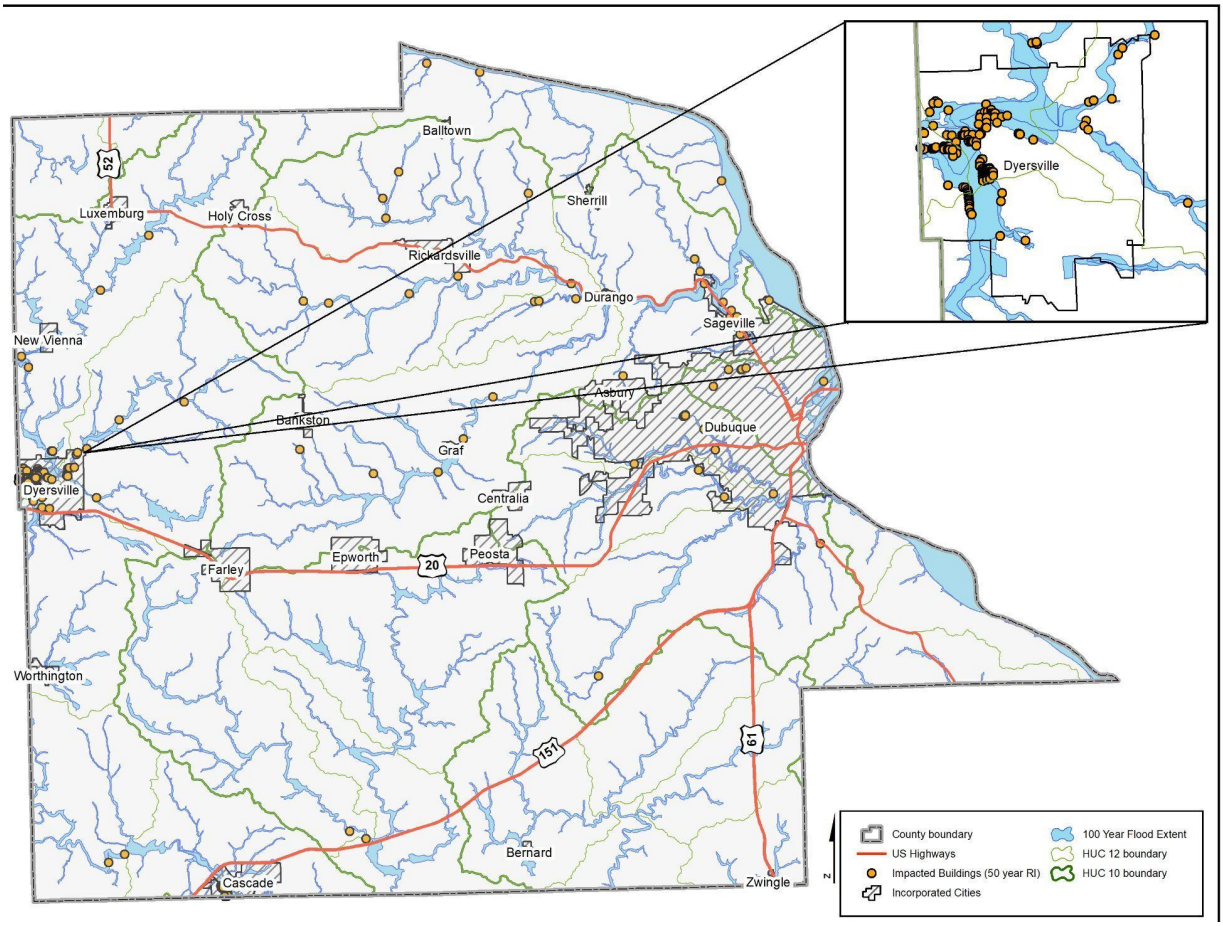
Where do we focus in this county?

Target the center?
Works in archery!

Distribute all around?
That's fair, right?

Close to Mississippi?
Most water there

Where?!?



Examining an area's potential of using a watershed approach to reduce floods:

If you understand these two factors:

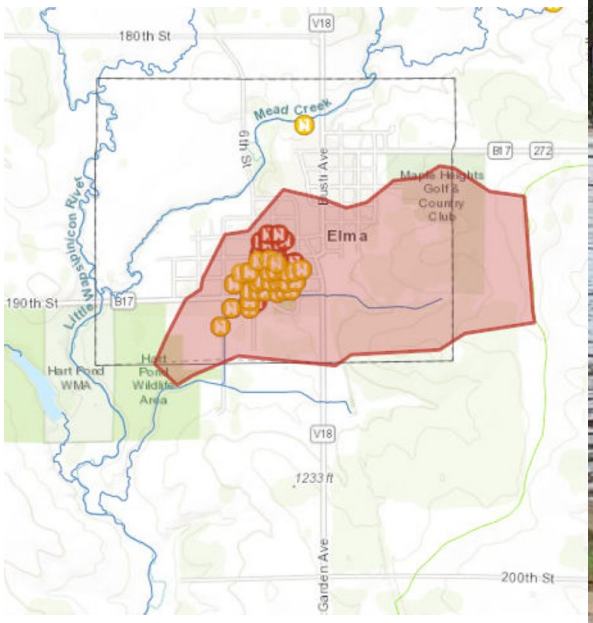
1. The smaller the watershed above flood impact area, the fewer practices are needed to reduce flood levels;
2. The greater the $ damage of flood impact area, the more opportunity for reducing potential flood losses.

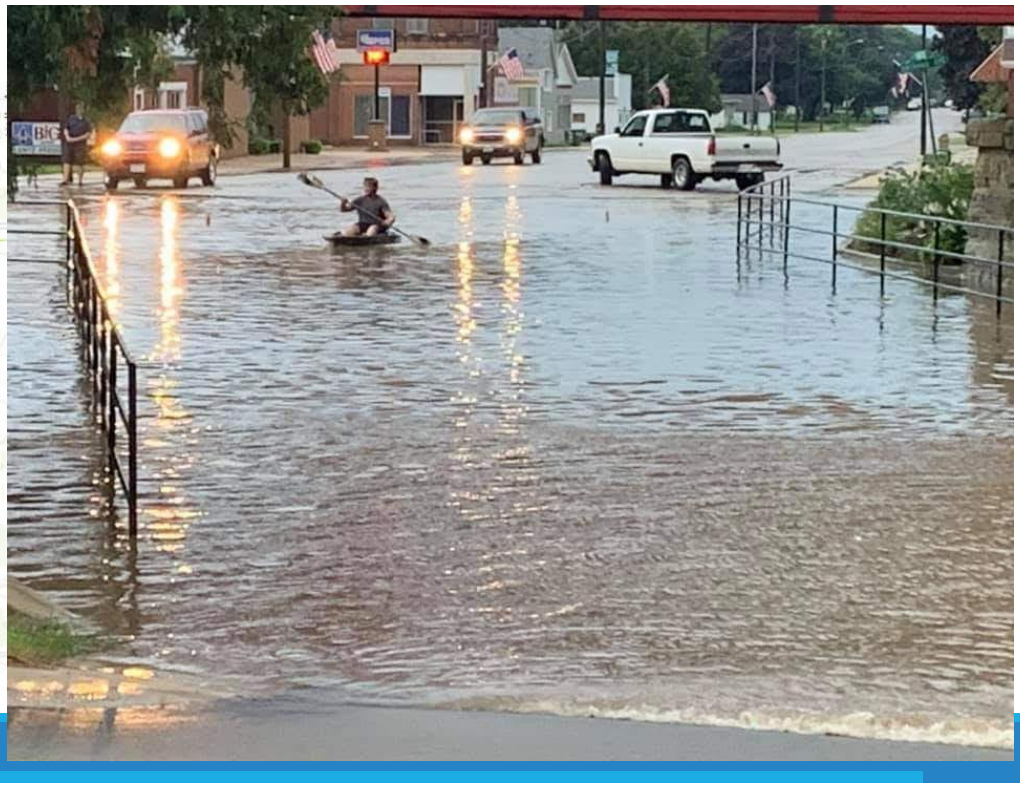
Then you can find where you have real PoWAR!

PoWAR =

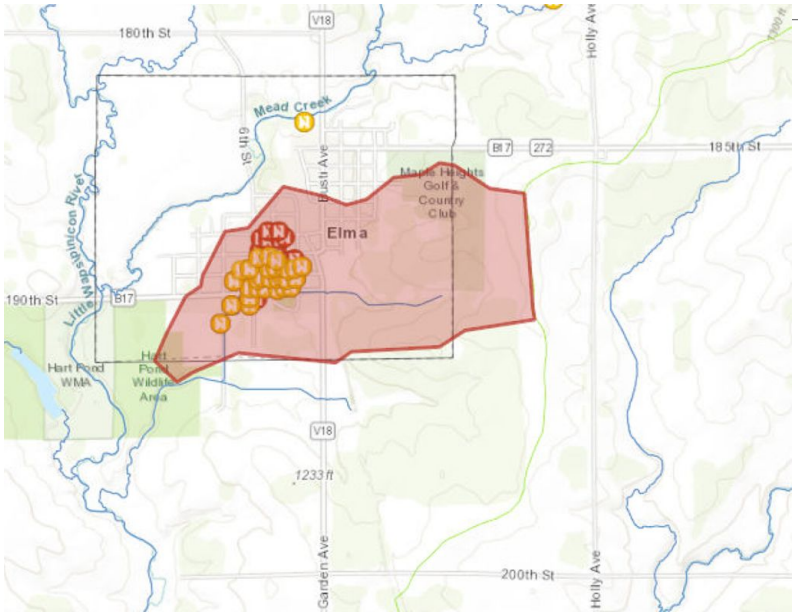
Potential Of using a Watershed Approach for Reducing floods

Example: Elma





POWAR Floods Ratio= $\frac{\text{\$ loss from potential flooding}}{\text{Watershed Area (acres)}}$



Evaluating the Potential Of using a Watershed Approach to Reduce Floods:

Building Loss[4]	$23,644
+Content Loss[4]	$7,667
+Inventory Loss[4]	$22
=Total Annual Avg. Loss[4]	$31,333
Divided by	
Total Upstream Drainage Acres	425
Elma's POWAR Floods ratio=	**74**

4 Loss shown is an annualized loss. Loss amounts were determined for several recurrence intervals. Then, these were all combined by annualizing them using Simpson's Rule.

Find and start with areas with greatest "POWAR"

P otential
O f using a
W atershed
A pproach for
R educing Floods

POWAR = $ Flood Damage / Area Upstream

The higher the POWAR Floods ratio, the more likely watershed approach flood reduction can be achieved.

Examples:	Decorah	Dyersville	Dunkerton	Sumner
Building Loss	$5,204,944	$4,132,327	$843,495	$109,013
Content Loss	$2,245,117	$1,677,718	$355,331	$45,472
Inventory Loss	$76,314	$212,689	$55,981	$83,606
Total Loss	$7,526,375	$6,022,734	$1,254,807	$238,091
Divided by				
Total Upstream Drainage Acres	304,988	75,476	63,120	30,820
= PoWAR	**25**	**80**	**20**	**8**

Upcoming Silver Jackets Project:

Find watersheds with highest POWAR Floods ratios

- Calculate POWAR Floods ratios throughout Iowa

- Use HSEMD's Flood Loss Estimates

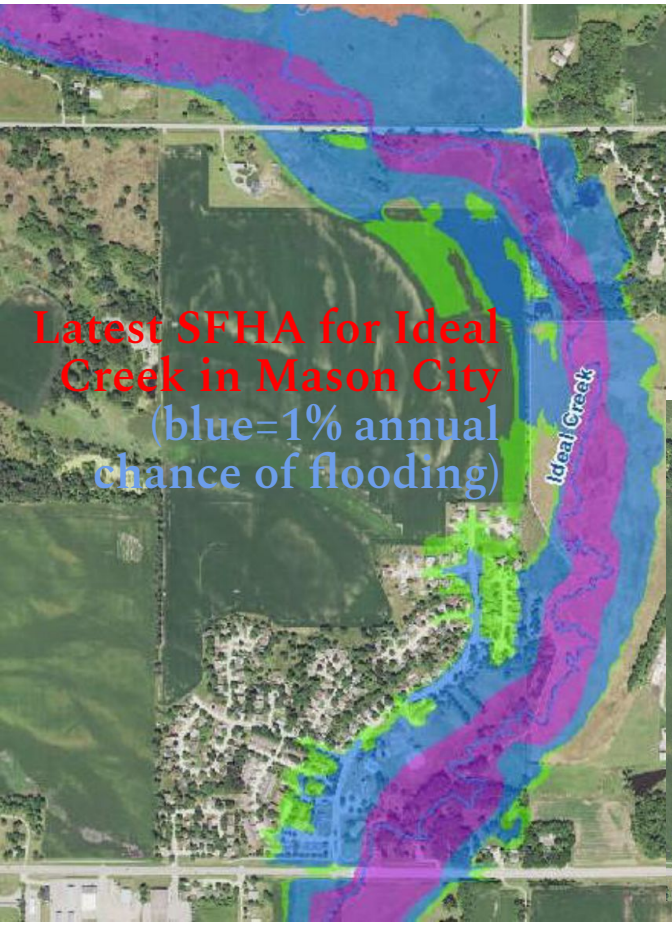
- For areas with high POWAR Floods ratios, provide information needed for NRCS' WFPO Preliminary Investigation Feasibility Report

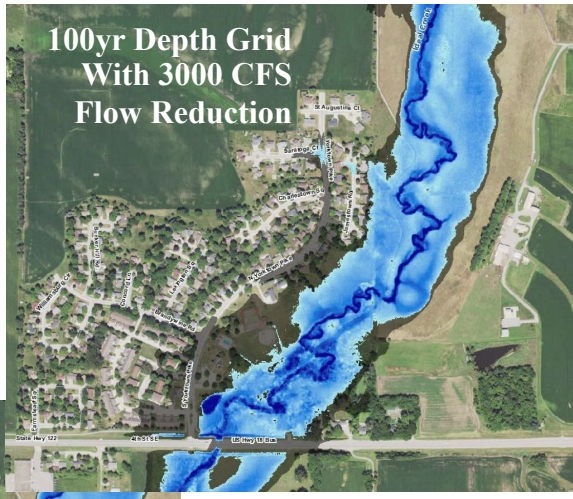
HSEMD Resilience Strategies Report

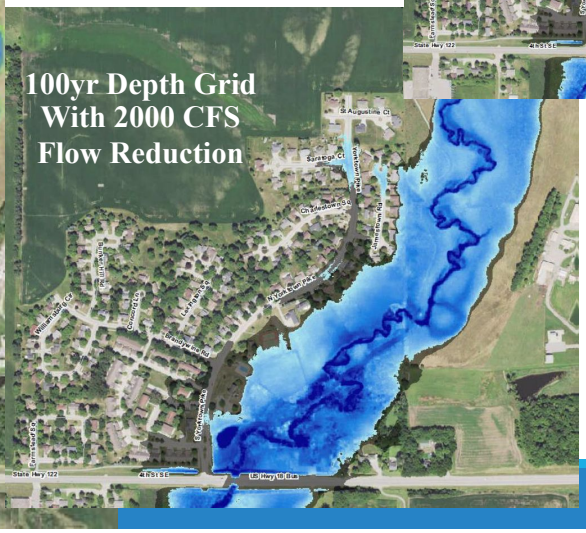
A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

1. Examine a watershed area's potential of using a watershed approach to reduce floods (i.e. calculating POWAR Ratios)
2. Help communities determine how much streamflow must be reduced to reduce flood impacts
   A. Through help from Iowa DNR through RiskMAP RTTA (e.g. Mason City, Oelwein, Cherokee, Wolford, Garwin)

Example from Report Provided by RTTA Contractor







HSEMD Resilience Strategies Report

A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

1. Examine a watershed area's potential of using a watershed approach to reduce floods (i.e. calculating POWAR Ratios)
2. Help communities determine how much streamflow must be reduced to reduce flood impacts
   A. Through help from Iowa DNR through RiskMAP RTTA (e.g. Mason City, Oelwein, Cherokee, Wolford, Garwin)
   B. Through NRCS' Watershed Flood Prevention Operations (WFPO) planning grant
   C. Through help from USACE through Silver Jackets project (e.g. Hartley)

(Can access help from these or other resources through "Help CUT Flooding" at https://survey123.arcgis.com/share/173a7b57b0d7497780c2a501e69a8462)

HSEMD Resilience Strategies Report

A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

1. Examine a watershed area's potential of using a watershed approach to reduce floods (i.e. calculating POWAR Ratios)
2. Help communities determine how much streamflow must be reduced to reduce flood impacts

3. Help communities get engineering and other technical assistance in order to apply for grant funding opportunities
   A. Through NRCS' Watershed Flood Prevention Operations (WFPO) planning grant
   B. Through FEMA BRIC Direct Technical Assistance (e.g. Cherokee, Riverton)
   C. Through FEMA BRIC Project Scoping (hoping for Oelwein, Vinton, Hartley)
   D. Through FEMA HMGP Advance Assistance (hoping for Ideal Creek in Mason City)

HSEMD Resilience Strategies Report

A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

1. Examine a watershed area's potential of using a watershed approach to reduce floods (i.e. calculating POWAR Ratios)
2. Help communities determine how much streamflow must be reduced to reduce flood impacts
3. Help communities get engineering and other technical assistance in order to apply for grant funding opportunities
4. Provide additional funding for construction and implementation of watershed approach flood reduction projects

Strategies for Flood Resilience: A Four Point Guide to Helping Locals with Watershed Approach Flood Reduction

Strategies:

1. Calculate POWAR Ratios for watersheds
2. Help communities find how much streamflow must be reduced to reduce flood impacts (e.g. Help CUT Flooding)
3. Help communities get engineering & other technical assistance needed to apply for grants (e.g. BRIC Project Scoping)
4. Provide more funding for construction and implementation of watershed approach flood reduction projects

Still Needed:

- Estimate potential flood losses from road detours
- Once 2D BLE done, update building flood loss estimates
- Connect places with high POWAR #s to resources that calculate cfs reductions needed to reduce flood impacts
- Help locals identify good sites for watershed approach projects
- Help locals with design engineering *(help procure, provide non-federal match, or do engineering outright)*
- Assist with applying for grants (WFPO or FEMA HMA)
- Provide implementation funds for non-federal match (FEMA HMA) or to acquire property rights (WFPO)
- Create Program Coordinator to **Integrate Operations for Watershed Approach Flood Reduction**

Contact jim.marwedel@iowa.gov for questions or to get copy of Strategies report

IDALS WRCC Update

- **40 Iowa Farm Environmental Leader Award Recipients honored at Iowa State Fair**

- **Water Quality Initiative**
  - Statewide Cover Crop signups underway; more than $7 million in applications received
  - IDALS staff doing in-depth analysis of cover crop programs
  - WQI Demonstration project applications being accepted through 11/18/22
  - Staffing additions for engineering, contract management, GIS, and field specialists completed in last 18 months

- **Urban Conservation**
  - Request for Applications open for Urban Conservation projects through 11/18/22

IDALS WRCC Update

- **2023 Farm Bill Discussions Underway**
  - IDALS working with state and national partners on proposals; contact us if you have suggestions
- **Regional Permits for Wetlands Reissued on September 16**
- **Working with DNR on Joint Nonpoint Source Program Evaluation and Shared Priorities**
- **New Conservation Opportunities through RCPP and Climate Smart Agriculture initiatives through USDA**